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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/659,948	09/12/2000	Richard T. Antony	VGS-PA-1	6163
27510	7590	01/10/2006		
KILPATRICK STOCKTON LLP 607 14TH STREET, N.W. WASHINGTON, DC 20005				
			EXAMINER DAY, HERNG DER	
			ART UNIT 2128	PAPER NUMBER

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/659,948

Applicant(s)

ANTONY, RICHARD T.

Examiner

Herng-der Day

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-30 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 21-30 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 25 November 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is in response to Applicant's Reply ("Reply") to Office Action dated August 25, 2005, mailed November 25, 2005.

1-1. Claims 21-30 are pending.

1-2. Claims 21-30 have been examined and rejected.

Drawings

2. The replacement sheets received on November 25, 2005, are not acceptable and are objected to for the following reasons. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the Examiner, the Applicants will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2-1. As shown in Fig. 8, it appears that "the second set of tuple-pairs do not intersect" in the description of Case 2 should be "the second set of tuple-pairs do not intersect" and "two black line segments must be elevated" in the description of Case 3 should be "two black line segments must be elevated".

2-2. As shown in Fig. 18 and Fig. 20, there are dashed entrance and exit but no dashed lines.

Specification

3. The Substitute Specification filed November 25, 2005, is objected to because of the following informalities. Applicant should carefully review the Substitute Specification.

Appropriate correction is required.

3-1. It appears that “As proven below, the procedure is potentially order of magnitudes faster than traditional computational geometry approaches”, as described in paragraph [0068], should be “As proven below, the procedure is potentially order of magnitudes faster than traditional computational geometry approaches”.

3-2. It appears that the equation as shown in paragraph [0076]:

$$y \text{ intersection point} = mx - mx_i + y_1$$

should be:

$$y \text{ intersection point} = mx - mx_i + y_i$$

3-3. It appears that “The bold gray arrows in Fig. 16 trace the boundary closing cycle”, as described in paragraph [00100], should be “The bold gray arrows in Fig. 17 trace the boundary closing cycle”.

3-4. The equations as shown in paragraph [00123] do not appear to be consistent. For example, by defining $m = m_i$ and $n = n_j$, where $i = 1, 2, \dots, I$ and $j = 1, 2, \dots, J$, then the other two equations are definitely inconsistent with the definition.

3-5. To be consistent, it appears that “the (boundary cell) x (boundary cell) component”, as described in paragraph [00127], should be “the (boundary, boundary) component”.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 21-30 are rejected under 35 U.S.C. 101 because the inventions as disclosed in claims are directed to non-statutory subject matter.

5-1. Regarding claims 21-30, it appears to be directed merely to the manipulation of an abstract idea of performing Boolean operations for (boundary, boundary) indexing cell only without resulting in a practical application producing a concrete, useful, and tangible result.

In this application, what is claimed appears to be nothing more than using a computer to perform Boolean operations, which is believed to be too preliminary to convey any disclosed practical applications. As such, it is believed that the claims fail to recite a practical application which provides a concrete, useful, and tangible result. For example, as described in paragraph [00114], "The final set operation product of step 40 (Fig. 6) for two quadtree-represented regions is assembled as the concatenation of the products generated by the three stages of analysis". Therefore, accumulating only result tuples from the set operations on all (boundary, boundary) indexing cells does not appear to be complete enough to produce a concrete, useful, and tangible result in a practical application.

Allowable Subject Matter

6. Claims 21-30 are not taught by the prior art, and would be allowable if the above rejections under 35 U.S.C. 101 are overcome.

Applicant's Arguments

7. Applicant argues the following:

7-1. Claim Rejections - 35 USC §112

(1) "As part of the correction to the specification, the equation in paragraph [0076] as been replaced by the equation as originally filed" (page 10, Reply).

12-2. Claim Rejections - 35 USC §101

(2) "The claims positively recite the accumulation of result tuples that represent the product of a Boolean operation among a first and second region" (page 11, Reply).

(3) "Further, there is no requirement that a claim recite steps well know to those skilled in the art. Methods for the accumulation of tuples in cells that are not (boundary, boundary) cells are well known; as are methods for concatenating tuples from each cell type to arrive at a final result" (page 11, Reply).

(4) "The specification recites several examples of the utility of embodiments of the invention" (page 12, Reply).

(5) "Here, in addition to the utility recited in the claims of accumulating result tuples, the written description contains several assertions of the utility of the invention" (page 12, Reply).

Response to Arguments

8. Applicant's arguments have been fully considered.

8-1. Applicant's argument (1) is persuasive. The rejections of claims 21-30 under 35 U.S.C. 112, first paragraph, in Office Action dated August 25, 2005, have been withdrawn.

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8-2. Applicant's arguments (2)-(5) are not persuasive. While the practical application need not be explicitly recited in the claims, what is claimed must adequately convey the disclosed practical application to one of ordinary skill. In this instance, what is claimed appears to be nothing more than using a computer to perform Boolean operations, which is believed to be too preliminary to convey any disclosed practical applications. As such, it is believed that the claims fail to recite a practical application which provides a concrete, useful, and tangible result.

Conclusion

9. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Herng-der Day whose telephone number is (571) 272-3777. The Examiner can normally be reached on 9:00 - 17:30.

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Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: (571) 272-2100.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kamini S. Shah can be reached on (571) 272-2279. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Herng-der Day
January 5, 2006 H.D.

Thaiphon
Thai Phan
Patent Examiner
AU: 2128